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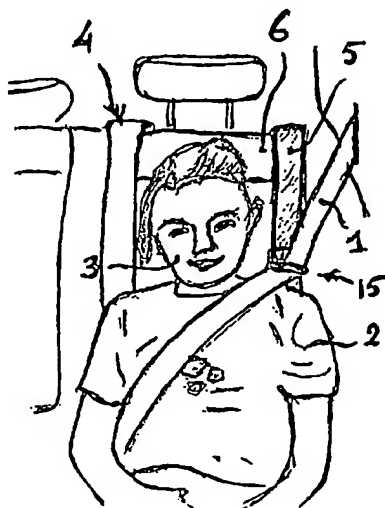
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(54) Title: ADJUSTABLE SEAT BELT GUIDE



(57) Abstract: The present invention relates to an adjustable seat belt guide (15) which is constructed of a clamping belt (5) around the back support (6) of a car seat (4) in a vertical way and supplied with a tightening retaining clip (7) for a taut fastening, in which through a cover (8) around the clamping belt (5) a rectangular carabiner or other inventable locking mechanism (10) provided with a lockable opening, preferably a turnable bush (11) is attached, in which the car seat belt (1) is applied through the locking mechanism (10) so that a very comfortable complete car seat belt assembly is created for a pleasant ride.

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**ADJUSTABLE SEAT BELT GUIDE**

The present invention relates to a device for adjusting the upper point of grip of seat belts, a so called  
5 adjustable seat belt guide, in which the mentioned upper point of grip should be lowerable in most cases to be adjusted to the length of the user, which in that case are mostly "young" people with a body length between 1m and 1,65m.

10 A somewhat similar adjustable seat belt guide is not known in the looked up patent literature, but there is known a general in height adjustable seat belt, not being a seat belt guide. It concerns the European patent document number WO 9210385, based on the Swedish patent document  
15 number SE 199 00003883 19901206 of VOLVO AB (SE) with inventor PILHALL STIG (SE).

Here it concerns a seat belt guide, which is mounted adjustably on the top side on the inside of the vehicle, mostly a private car, and as mentioned especially meant for  
20 persons on the back seat. The seat belt of the retractable reel-like type and is mounted on the inner side of the compartment of the vehicle. The in height adjustable assembly consists of an in longitudinal direction sticking-out body mounted on the inner side of the compartment at  
25 shoulder height of the person, in which the length of the guiding body, in which the upper attachment point of the safety belt can be fixed slidably is such, that with smaller "adult" people the transverse belt does not touch the face.

30 The aforementioned known device has a number of disadvantages, being that by adjustment of only the upper attachment point of the safety belt the transverse belt or cross belt, in spite of all invented constructions, it does

not lay low enough over just the chest of smaller persons,  
as there should be an adjustment possibility up to below  
the upper side of the back support of the car seat. Letting  
it run over the car seat with friction would not be a  
5 solution for a comfortable safety belt and especially the  
transverse belt or cross belt either so that, the known  
adjustment device certainly does not offer a comfortable  
solution.

Furthermore another similar solution, as described  
10 above, known from the French patent document FR 2533446 of  
applicant RENAULT (FR) with inventor JOURDAN, Jacques and  
LARSONNEUR, Jean-Francois.

According to their description it concerns a safety  
belt with retracting assembly and device for adjusting the  
15 height of the transverse belt or cross belt, in which the  
upper side can be fixed adjustably to a vertical guide on  
the inner side of the vehicle, so that also here the upper  
side of the transverse belt can be adjusted to a certain  
extent. For smaller persons and especially young people  
20 these described adjustment possibilities are not nearly  
enough and the aforementioned disadvantages of un-safety  
and little comfort during the ride are still maintained.

The aim of the present invention concerns to provide  
such a solution for adjusting in height of the transverse  
25 belt or cross belt, that the aforementioned disadvantages  
are eliminated and of which the use is better and by which  
an adjustable seat belt guide can be delivered which is  
suitable for widely use at a favourable cost price.

For this a device for adjusting the upper point of grip  
30 of seat belts and specifically a height lower than the  
upper side of the back support is further developed in a  
very inventive way, that the mentioned device, the so  
called adjustable seat belt guide, is constructed of a

vertical, around the side of the back support of the car seat attachable or mountable clamping belt or belt with tightening retaining clip for a taut fastening, in which around the mentioned clamping belt a movable cover is  
5 applied with at least one rectangular opening faced away from the back support and transverse on the direction of the clamping belt for leading through a rectangular carabiner applied around the clamping belt and which also goes through the mentioned rectangular opening, in which  
10 the actual supporting seat belt is fixed through the rectangular of the carabiner, in which the mentioned carabiner is lockable or retainable on the outside, in which the material of the mentioned clamping belt can be a woven fabric and the material of the locking mechanism can  
15 be a metal or plastic or any other material with sufficient strength quality.

The advantage is that a guiding adjustment possibility is created for almost every body length, which strongly improves the comfort and safety for, for example children  
20 and makes the journey much more pleasant.

Further the device according to the invention is developed in such a way, that the mentioned clamping belt of the adjustable seat belt guide is of woven seat belt fabric, and that the mentioned tightening retaining clip is  
25 an in the market available lashing buckle or another design of a clip or clasp.

The advantage is that the adjustable seat belt guide can be applied fast and effectively (without sliding while in use) around the back support of the car seat.

30 Furthermore the device according the to invention is developed in such a way that, the mentioned cover can be made of a woven fabric, leather, plastic or any material with flexible properties, in which at least one central

rectangular opening is applied for the carabiner or other locking mechanism and further, if required, above and below the mentioned rectangular opening two parallel rectangular slits for lead-through of the clamping belt are applied.

5       The advantage is an in unloaded position slidable cover over the belt of the adjustable seat belt guide and after attaching the locking mechanism (at this moment the carabiner) stays well at the desired height.

10       Furthermore the device according to the invention is further developed in such a way, that the mentioned carabiner has an opening faced outwardly, which can be closed by a turnable over the carabiner elongated bush with roughened outer surface or that the mentioned carabiner has an opening faced outwardly, which can be closed by a spring  
15       snap construction or lip construction or other thinkable locking mechanism.

20       The advantages are that the transverse belt of the seat belt can be attached or mounted in a suitable and very handy way through the locking mechanism of mentioned carabiner of the adjustable seat belt guide.

      The preferred construction of the invention will be described by way of example, and with reference to the accompanying drawing, in which:

25       Fig. 1 shows a front view in oblique projection of the usual position of a safety belt on a young lady with a small body length and constructed according to the known art;

30       Fig. 2 shows a front view in oblique projection of the utilization of the adjustable seat belt guide according to a preferred embodiment of the invention on the young lady of figure 1;

Fig. 3' shows a front view in oblique projection of the adjustable seat belt guide according to a first preferred embodiment of the invention; and

Fig. 4 shows a front view in oblique projection of the adjustable seat belt guide according to a second preferred embodiment of the invention.

Figure 1 shows a front view in oblique projection of the usual and mostly only way of positioning or application of the known safety belt 1 on a young lady or child 2 with a relatively small body length.

The child or the young lady 2 is mostly seated on the back seat 4 of a car and therefore gets the cross belt of the safety belt 1 against her face 3, which is very annoying and because of which the trip becomes unpleasant.

Figure 2 shows a front view in oblique projection of the utilization of the adjustable seat belt guide 15 with clamping belt 5 for the cross belt of the safety belt 1. This way the child or the young lady 2 experiences the car trip as much more pleasant. The adjustable seat belt guide 15 with clamping belt 5 is strapped around the back support 6 of the back seat 4 in a vertical way. Strapping is done with a tightening retaining clip 7, as shown in figures 3 and 4. The adjustable seat belt guide 15 with clamping belt 5 further consists of an along the seat belt guide movable or slidable cover 8 with, faced away from the adjustable seat belt guide 15 with clamping belt 5, at least one rectangular opening 9 transverse on the direction of the adjustable seat belt guide 15 with clamping belt 5, through which the adjustable seat belt guide 15 with clamping belt 5 becomes visible again from the outside. Through the mentioned opening 9 a carabiner 10 is fixed around the actual clamping belt 5 of the adjustable seat belt guide 15 by means of, for example screwing the turnable bush lock 11

open. By opening the carabiner 10 again the cross belt of the safety belt 1 is applied or mounted, after which the opened carabiner is closed again and the adjustable seat belt guide is a fact. This turnable bush lock 11 can also  
5 be replaced by a springy snap construction or lip construction (not indicated).

Figure 4 also shows two parallel rectangular slits 12 and 13 above and below the central rectangular opening 9. This can have as purpose that the cover 8 is slidable along  
10 the adjustable belt with a larger friction. Furthermore logo's, advertisement messages, marks and further texts can be applied on the cover 8, through which the whole looks even more aesthetic or desirable and possibly leads to even better sale results.

15 Finally it has to be emphasized, that the above description constitutes a preferred embodiment of the present invention and that further variations and modifications are still possible without departing the scope of this patent description.

20

## CLAIMS

1. Device for adjusting the upper point of grip of seat  
5 belts, a so called adjustable seat belt guide (15), in  
which mentioned upper point of grip should be lowerable in  
most cases to be adjusted to the length of the user, which  
in that case are mostly "young" people with a body length  
between 1m and 1,65m, **characterized in that**, the mentioned  
10 device, the so called adjustable seat belt guide (15), is  
constructed of a vertical, around the side of the back  
support (6) of the car seat (4) attachable or mountable  
clamping belt (5) or belt with tightening retaining clip  
(7) for a taut fastening, in which around the mentioned  
15 clamping belt (5) a movable cover (8) is applied with at  
least one rectangular opening (9) faced away from the back  
support and transverse on the direction of the clamping  
belt for leading through of a rectangular carabiner (10)  
applied around the clamping belt (5) and which also goes  
20 through the mentioned rectangular opening (9), in which the  
actual supporting seat belt (1) is fixed through the  
rectangular of the carabiner (10), in which the mentioned  
carabiner (10) is lockable or retainable on the outside, in  
which the material of the mentioned clamping belt (5) can  
25 be a woven fabric and the material of the locking mechanism  
can be a metal or plastic or any other material with  
sufficient strength quality.

2. Device as claimed in claim 1, **characterized in that**,  
the mentioned clamping belt (5) of the adjustable seat belt  
30 guide (15) is of woven seat belt fabric, and that the  
mentioned tightening retaining clip (7) is a lashing buckle  
which is available in the market.



3. Device as claimed in claim 1, **characterized in that**, the mentioned cover (8) can be made of a woven fabric, leather, plastic or any material with flexible properties, in which at least one central rectangular opening (9) is  
5 applied for the carabiner or other locking mechanism (10) and further, if required, above and below the mentioned rectangular opening (9) two parallel rectangular slits (12, 13) for a lead-through of the clamping belt (5) are applied.

10 4. Device as claimed in aforementioned claims, **characterized in that**, the mentioned carabiner (10) has an opening faced outwardly, which can be closed by a turnable over the carabiner elongated bush (11) with roughened outer surface.

15 5. Device as claimed in claims 1-3, **characterized in that**, the mentioned carabiner (10) has an opening faced outwardly, which can be closed by a spring snap construction or lip construction.

6 Device as claimed in claims 1-3, **characterized in**  
20 **that**, the mentioned carabiner (10) has an opening faced outwardly, which can be closed by a round wire mounted through a bore and springy over a hook.

7. Device as claimed in aforementioned claims, **characterized in that**, the material of the mentioned  
25 carabiner (10) or other locking mechanism that can be invented, is stainless steel or any material with sufficient strength quality and that the mentioned plastic is polypropylene.

8. Device as claimed in aforementioned claims,  
30 **characterized in that**, the outer surface of the device, the adjustable seat belt guide (15) and especially the cover (8) with the carabiner (10) can be provided with

advertisement messages, marks, logo's, further texts and such to give the whole a more attractive look.

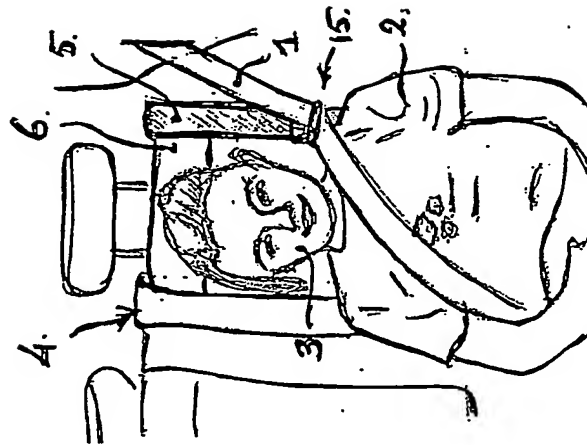


FIG. 2.

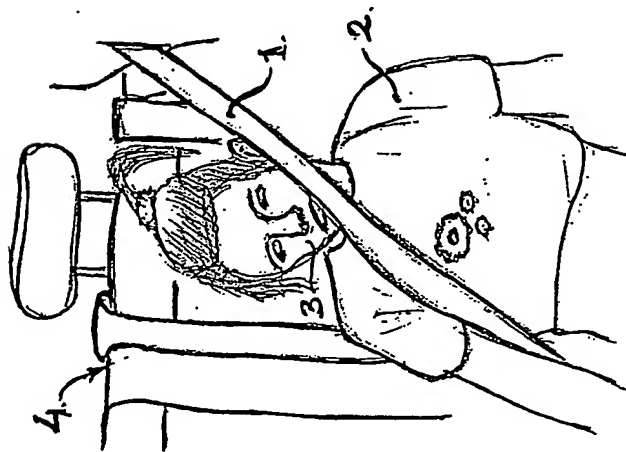
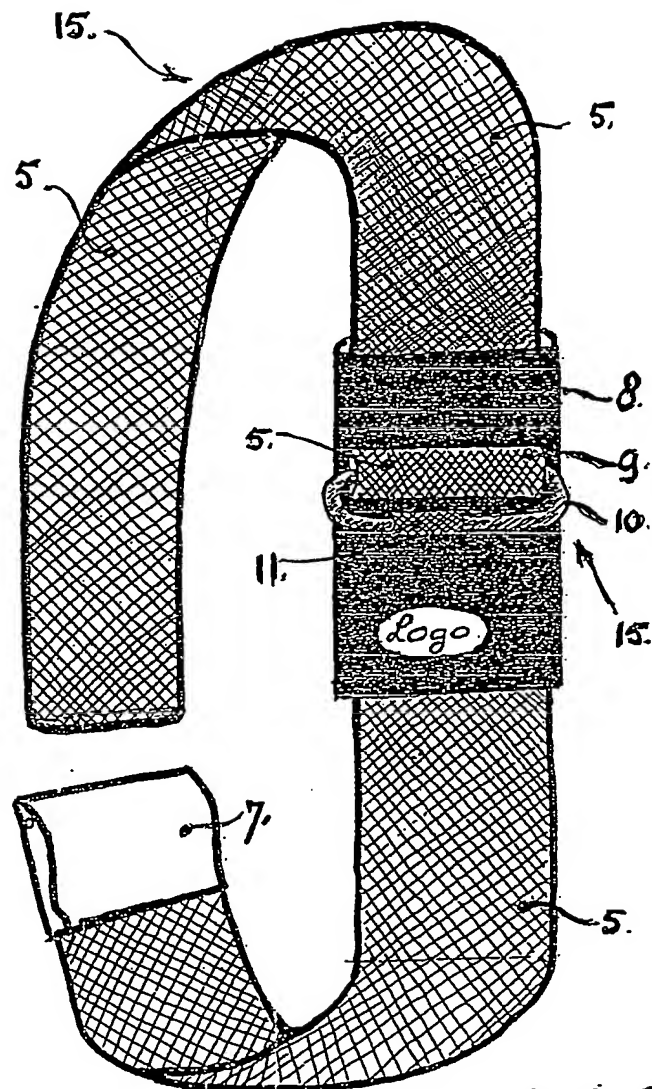
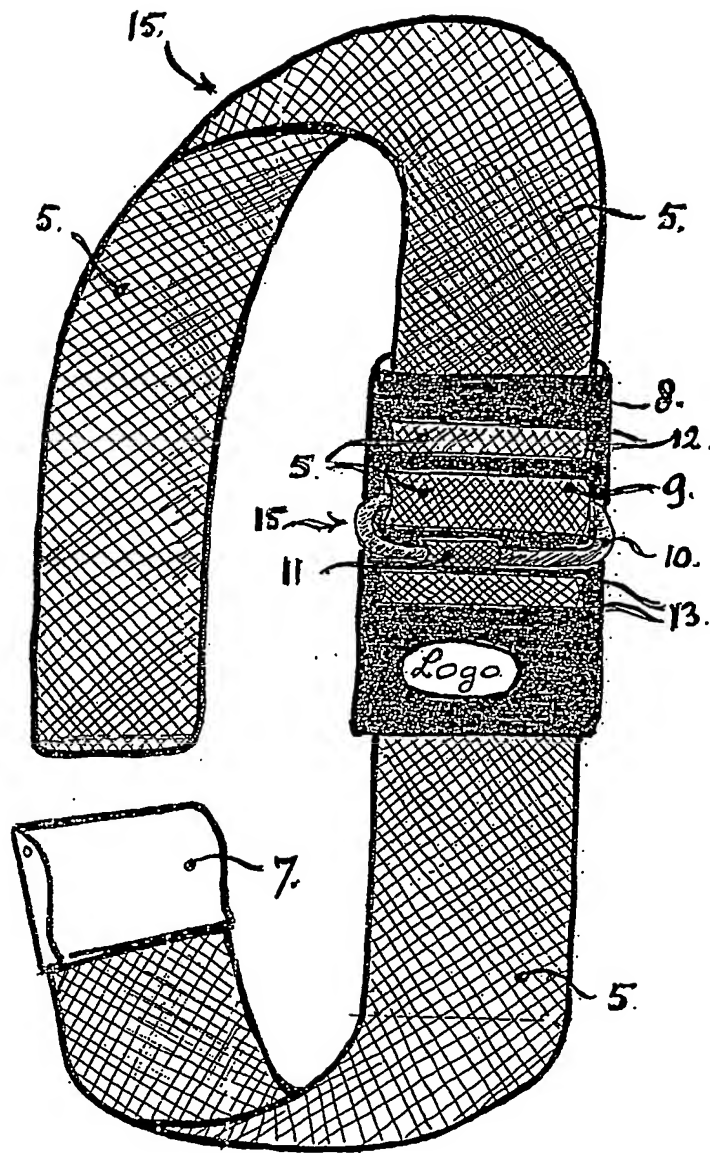


FIG. 1.

FIG. 3.

FIG. 4.

## INTERNATIONAL SEARCH REPORT

PCT/NL 02/00542

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 B60R22/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B60R A44B B64D A62B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 289 352 A (ASHWORTH ROGER A) 15 September 1981 (1981-09-15) the whole document	1
X	EP 0 952 047 A (SESAY PETER) 27 October 1999 (1999-10-27) the whole document	1-3
Y		8
Y	US 6 142 575 A (PATTERSON KIMBERLY A) 7 November 2000 (2000-11-07) the whole document	8
A	EP 1 092 410 A (JASANI YOGEN) 18 April 2001 (2001-04-18) the whole document	1
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 685 670 A (SOUCHKO ALEXANDRE) 2 July 1993 (1993-07-02) the whole document ---	1
A	DE 94 18 273 U (PROTEKTOR SICHERHEITSGERAETE G) 9 February 1995 (1995-02-09) the whole document ---	1
A	GB 2 208 468 A (ASE) 5 April 1989 (1989-04-05) the whole document ---	1
A	US 4 324 204 A (FRIEDMAN MICHAEL E) 13 April 1982 (1982-04-13) -----	

# INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/NL 02/00542

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4289352	A	15-09-1981	AT 140579 A DE 2906988 A1 DK 76979 A FR 2417989 A1 NL 7901402 A NZ 189720 A SE 7901575 A YU 42679 A1	15-08-1984 30-08-1979 23-08-1979 21-09-1979 24-08-1979 10-05-1983 23-08-1979 31-10-1982
EP 0952047	A	27-10-1999	EP 0952047 A1 GB 2337727 A ,B US 6092265 A	27-10-1999 01-12-1999 25-07-2000
US 6142575	A	07-11-2000	NONE	
EP 1092410	A	18-04-2001	GB 2355248 A EP 1092410 A2	18-04-2001 18-04-2001
FR 2685670	A	02-07-1993	FR 2685670 A1	02-07-1993
DE 9418273	U	09-02-1995	DE 9418273 U1	09-02-1995
GB 2208468	A	05-04-1989	NONE	
US 4324204	A	13-04-1982	NONE	